1. (CURRENTLY AMENDED) Stereoscopic device comprising:

a sensor assembly having an optical axis, for detecting a sequence of alternating stereoscopic images of an object;

a movement detector, detecting movements of said sensor assembly perpendicular to the optical axis, relative to said object, an average of said movements being constant and defining a location of origin; and

a processing unit connected to said sensor assembly and to said movement detector,

wherein said processing unit selects corresponding portions of said alternating stereoscopic images, according to a signal received from said movement detector and compensates for detected movements, thereby producing a visually stable sequence of display images; ~~and~~

wherein said visually stable sequence of display images comprises a plurality of sub-matrices, each one of said sub-matrices is selected from a respective one of said stereoscopic images, each one of said sub-matrices is located at a distance equal to a respective one of said movements from said location of origin, in a direction opposite to said respective movement, relative to said location of origin, and

wherein each one of said ~~sub-matrices has a same~~ display images has a predetermined and constant area size, the area size being smaller than that of each of said detected stereoscopic images.

2. (ORIGINAL) The stereoscopic device according to claim 1, wherein said sensor assembly comprises a lenticular lens layer and a light sensor array, wherein said lenticular lens layer is located in front of said light sensor array.

3. (ORIGINAL) The stereoscopic device according to claim 1, wherein said

processing unit comprises a processor connected to said movement detector and a memory unit connected to said processor.

4-5. (CANCELLED)

6. (ORIGINAL) The stereoscopic device according to claim 1, further comprising:

an interface connected to said sensor assembly and to said processor;
a light source connected to said interface;
a stereoscopic video generator connected to said processor; and
a stereoscopic display unit connected to said stereoscopic video generator, for producing said visually stable sequence of display images.

7. (ORIGINAL) The stereoscopic device according to claim 6, wherein said light source produces light in a predetermined range of wavelengths.

8. (ORIGINAL) The stereoscopic device according to claim 6, wherein said light source produces at least two alternating beams of light, each said beams of light characterized as being in a different range of wavelengths.

9. (ORIGINAL) The stereoscopic device according to claim 1, wherein said visually stable sequence of display images is stereoscopic.

10. (ORIGINAL) The stereoscopic device according to claim 1, wherein said visually stable sequence of display images is partially stereoscopic.

11. (ORIGINAL) The stereoscopic device according to claim 7, wherein said predetermined range of wavelengths is selected from the list consisting of:

substantially visible red color light;
substantially visible green color light;
substantially visible blue color light;
substantially visible cyan color light;
substantially visible yellow color light;
substantially visible magenta color light;
substantially infra-red light;
substantially ultra-violet light; and
visible light.

12. (ORIGINAL) The stereoscopic device according to claim 2, wherein said light sensor array is a color red-green-blue (RGB) sensor array.

13. (ORIGINAL) The stereoscopic device according to claim 2, wherein said light sensor array is a color cyan-yellow-magenta-green (CYMG) sensor array.

14. (CANCELLED)

15. (ORIGINAL) The stereoscopic device according to claim 1, wherein said sensor assembly further comprises:

at least two apertures, each said apertures including a light valve, each said light valves being operative to open at a different predetermined timing; and

a multi wavelength light sensor array;

wherein said multi wavelength light sensor array detects said images, each one of said images corresponding to a predetermined combination of an open state of a selected one of said light valves and a selected one of at least two alternating beams of light.

16. (PREVIOUSLY PRESENTED) The stereoscopic device according to claim 15, further comprising a controllable multi wavelength illumination unit, connected to said processing unit, said controllable multi wavelength illumination unit producing at least two alternating beams of light, each said beams of light characterized as being in a different range of wavelengths.

17. (ORIGINAL) The stereoscopic device according to claim 15, further comprising capture means, connected to said multi wavelength light sensor array, for capturing data received from said multi wavelength light sensor array.

18. (ORIGINAL) The stereoscopic device according to claim 17, wherein said processing unit further comprises:

an image processor;

a storage unit connected to said image processor, said storage unit capturing said capturing data; and

a controller connected to said storage unit, said movement detector, said light valves, and to said multi wavelength light sensor array, said controller timing the

operation of said light valves, said multi wavelength light sensor array and said controllable multi wavelength illumination unit.

19. (ORIGINAL) The stereoscopic device according to claim 15, wherein said multi wavelength light sensor array includes at least two groups of sensors, wherein the sensors of each said group detect light in a different range of wavelengths.

20. (ORIGINAL) The stereoscopic device according to claim 15, wherein said multi wavelength light sensor array includes a plurality of sensors, each of said sensors detecting light in a predetermined range of wavelengths.

21. (ORIGINAL) The stereoscopic device according to claim 16, wherein said controllable multi wavelength illumination unit produces at least two alternating beams of light, each said beams of light characterized as being in a difference range of wavelengths.

22. (ORIGINAL) The stereoscopic device according to claim 16, wherein each said different ranges of wavelengths associated with said multi wavelength illumination unit, is selected from the list consisting of:

substantially visible red color light;
substantially visible green color light;
substantially visible blue color light;
substantially visible cyan color light;
substantially visible yellow color light;
substantially visible magenta color light;
substantially infra-red light;
substantially ultra-violet light; and
visible light.

23. (ORIGINAL) The stereoscopic device according to claim 19, wherein each said different ranges of wavelengths associated with said sensors, is selected from the list

consisting of:

substantially visible red color light;
substantially visible green color light;
substantially visible blue color light;
substantially visible cyan color light;
substantially visible yellow color light;
substantially visible magenta color light;
substantially infra-red light;
substantially ultra-violet light; and
visible light.

24. (ORIGINAL) The stereoscopic device according to claim 15, wherein said multi wavelength light sensor array is a color red-green-blue (RGB) sensor array.

25. (ORIGINAL) The stereoscopic device according to claim 15, wherein said multi wavelength light sensor array is a color cyan-yellow-magenta-green (CYMG) sensor array.

26-27. (CANCELLED)

28. (PREVIOUSLY PRESENTED) The stereoscopic device according to claim 15, wherein the color of each of said sub-matrices is selected from the list consisting of:

substantially visible red;
substantially visible green;
substantially visible blue;
substantially visible cyan;
substantially visible yellow; and
substantially visible magenta.

29. (ORIGINAL) The stereoscopic device according to claim 18, further comprising:

a stereoscopic video generator connected to said image processor; and

a stereoscopic display unit connected to said stereoscopic video generator, for producing said visually stable sequence of display images.

30. (CURRENTLY AMENDED) Method for producing a stable sequence of stereoscopic images of an object, the method comprising the steps of:

detecting a plurality of alternating stereoscopic images, using a stereoscopic sensor assembly having an optical axis;

for each said alternating stereoscopic images, detecting movements of said stereoscopic sensor assembly perpendicular to said optical axis relative to said object, an average of said movements is constant and defining a location of origin;

for each said stereoscopic images, selecting a corresponding portion of each of corresponding ones of said stereoscopic images, according to said respective movement, said corresponding portion being a sub-matrix of a respective one of said stereoscopic images, wherein each one of said sub-matrices is located at a distance equal to a respective one of said movements from said location of origin, in a direction opposite to said respective movement, relative to said location of origin, wherein said step of selecting further comprises a sub-procedure of measuring a distance of a respective one of said movements from said location of origin, in a direction opposite to said respective movement relative to said location of origin; and

compensating for said detected movements of said stereoscopic sensor assembly, thereby producing a visually stable sequence of display images, said visually stable sequence of display images comprises a plurality of said sub-matrices, wherein each one of said ~~sub-matrices~~ display images has a ~~same~~ predetermined and constant area size smaller than an area size of each of said detected stereoscopic images.

31. (ORIGINAL) The method according to claim 30, further comprising a

preliminary step of illuminating a detected area of said object.

32. (CANCELLED)

33. (PREVIOUSLY PRESENTED) The method according to claim 31, wherein said stereoscopic sensor assembly comprises a lenticular lens layer and a light sensor array, wherein said lenticular lens layer is located in front of said light sensor array.

34. (ORIGINAL) The method according to claim 33, wherein said step of illuminating comprises a procedure of sequentially illuminating said detected area, with alternating beams of light of different ranges of wavelengths.

35. (CANCELLED)

36. (PREVIOUSLY PRESENTED) The method according to claim 33, further comprising a step of associating each one of said sub-matrices in time, with the currently illuminating ranges of wavelengths.

37. (PREVIOUSLY PRESENTED) The method according to claim 31, wherein said stereoscopic sensor assembly comprises:

at least two apertures, each said apertures including a light valve, each said light valves being operative to open at a different predetermined timing; and

a multi wavelength light sensor array,

wherein said multi wavelength light sensor array detects said images, each one of said images corresponding to a predetermined combination of an open state of a selected one of said light valves and a selected one of at least two alternating beams of light.

38. (ORIGINAL) The method according to claim 37, wherein said step of illuminating comprises a procedure of producing at least two alternating beams of light,

each said beams of light characterized as being in a different range of wavelengths.

39. (CANCELLED)

40. (PREVIOUSLY PRESENTED) The method according to claim 38, further comprising a step of associating each one of said sub-matrices, at said different predetermined timing, with said different range of wavelengths.

41. (PREVIOUSLY PRESENTED) The stereoscopic device according to claim 1, wherein said alternating stereoscopic images alternate between a left image and a right image.

42. (PREVIOUSLY PRESENTED) The method according to claim 30, wherein said alternating stereoscopic images alternate between a left image and a right image.